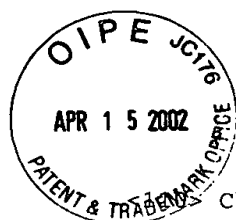


#5



SEQUENCE LISTING

Chen, Fang

<120> DNA MOLECULES ENCODING HUMAN NUCLEAR
RECEPTOR PROTEINS

<130> 19999YCA

<140> 10/054,841

<141> 2002-01-23

<150> 09/487,379

<151> 2000-01-18

<150> 09/141,000

<151> 1998-08-26

<150> 60/078,633

<151> 1998-03-19

<150> 60/062,902

<151> 1997-10-21

<150> 60/057,090

<151> 1997-08-27

<160> 30

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 2807

<212> DNA

<213> Human

<400> 1

gaatatgatg	accctaattgc	aacaatatct	aacatactat	ccgagcttcg	gtcattttgga	60
agaactgcag	atthttcctcc	ttcaaaatta	aagtcagggt	atggagaaca	tgtatgctat	120
gtttcttgatt	gcttcgctga	agaagcattg	aaatatattg	gtttcacctg	gaaaaggcca	180
atatacccag	tagaagaatt	agaagaagaa	agcgttgacg	aagatgatgc	agaattaaca	240
ttaaataaag	tggatgaaga	atthgtggaa	gaagagacag	ataatgaaga	aaactttatt	300
gatctcaacg	ttttaaaggc	ccagacatat	cacttgata	tgaacgagac	tgccaaacaa	360
gaagatattt	tggaatccac	aacagatgct	gcagaatgga	gcctagaagt	ggaacgtgta	420
ctaccgcaac	tgaaagtcac	gattaggact	gacaataagg	attggagaat	ccatgttgac	480
caaatgcacc	agcacagaag	tggaattgaa	tctgctctaa	aggagaccaa	gggatttttg	540
gacaaactcc	ataatgaaat	tactaggact	ttggaaaaga	tcagcagccg	agaaaagtac	600
atcaacaatc	agccgggagc	ccatggagca	ctgtcctcag	agatgcgcag	gttaggctca	660
ctgtctaggc	caggcccacc	ttagtcactg	tggaactggc	atggaagctc	ttcctggaca	720
cacctgcect	agccctcacc	ctgggggtgga	agagaaatga	gcttggtctg	caactcagac	780
cattccacgg	aggcatcctc	cccttccttg	ggctggtgaa	taaaagtthc	ctgaggtcaa	840
ggacttcctt	ttccctgcca	aaatggtgtc	cagaactttg	aggccagagg	tgatccagtg	900
atthgggagc	tgcaaggctac	acaggctgct	cagagggtctg	ctgaacagga	tgctctcgga	960
cgacaggcac	ctgggctcca	gctgcggctc	cttcatcaag	actgagccgt	ccagcccgtc	1020
ctcggggcata	gatgccttca	gccaccacag	ccccagtggc	tcgtccgacg	ccagcggcgg	1080
ctttggcctg	gcccctggga	cccacgccaa	cggtctggac	tcgccacca	tgthttgcagg	1140
cgccgggctg	ggaggcaccc	catgccgcaa	gagctacgag	gactgtgcca	gcggcatcat	1200
ggaggactcg	gccatcaagt	gcgagtacat	gctcaacgcc	atccccaaagc	gcctgtgcct	1260
cgtgtgcggg	gacattgcct	ctggctacca	ctacggcgctg	gcctcctgcg	aggcttgcaa	1320
ggccttcttc	aagaggacta	tccaagggaa	cattgagtac	agctgcccgg	ccaccaacga	1380
gtgcgagatc	accaaacgga	ggcgcaagtc	ctgccaggcc	tgccgcttca	tgaaatgcct	1440
caaagtgggg	atgctgaagg	aaggtgtgctg	ccttgatcga	gtgcgtggag	gccgtcagaa	1500

atacaagcga	cggctggact	cagagagcag	cccatacctg	agcttacaaa	tttctccacc	1560
tgctaaaaag	ccattgacca	agattgtctc	atacctactg	gtggctgagc	cggacaagct	1620
ctatgccatg	cctccccctg	gtatgcctga	gggggacatc	aaggccctga	ccactctctg	1680
tgacctggca	gaccgagagc	ttgtgggtcat	cattgggtgg	gccaagcaca	tcccaggctt	1740
ctcaagcctc	tccctggggg	accagatgag	cctgctgcag	agtgcctgga	tggaaatcct	1800
catcctgggc	atcgtgtacc	gctcgtgtcc	ctacgacgac	aagctggtgt	acgctgagga	1860
ctacatcatg	gatgaggagc	actccgcctc	cgcggggctg	ctggagctct	accggggccat	1920
cctgcagctg	gtacgcaggt	acaagaagct	caaggtggag	aaggaggagt	ttgtgacgct	1980
caaggccctg	gccctcgcca	actccgattc	catgtacatc	gaggatctag	aggctgtcca	2040
gaagctgcag	gacctgctgc	acgaggcact	gcaggactac	gagctgagcc	agcgccatga	2100
ggagccctgg	aggacgggca	agctgctgct	gacactgccg	ctgctgcggc	agacggccgc	2160
caaggccctg	cagcacttct	atagcgtcaa	actgcagggc	aaagtgccca	tgcacaaact	2220
cttcctggag	atgctggagg	ccaaggcctg	ggccagggtg	gactcccttc	aggagtggag	2280
gccactggag	caagtgcctc	ctcccctcca	ccgagccacc	aagaggcagc	atgtgcattg	2340
cctaactccc	ttgccccctc	ccccatctgt	ggcctgggtg	ggcactgctc	aggctggata	2400
ccacctggag	gttttccctc	cgcagagggc	aggttggcca	agagcagctt	agaggatctc	2460
ccaaggatga	aagaatgtca	agccatgatg	gaaaatgccc	cttccaatca	gctgccttca	2520
caagcagggc	tcagagcaac	tcccctggga	tcccacatcc	acgcccttct	agtccaaccc	2580
ccctcaatga	gagaggcagg	cagatctcac	ccagcactag	gacaccagga	ggccagggaa	2640
agcatctctg	gctcaccatg	taacatctgg	cttggagcaa	gtgggtgttc	tgcacaccag	2700
gcagctgcac	ctcactggat	ctagtgttgc	tgcgagtgc	ctcacttcag	agccccctca	2760
gcagagtggg	gcggaagtcc	tgatggttgg	tgtccatgag	gtggaag		2807

<210> 2

<211> 500

<212> PRT

<213> Human

<400> 2

Met	Ser	Ser	Asp	Asp	Arg	His	Leu	Gly	Ser	Ser	Cys	Gly	Ser	Phe	Ile
1				5				10						15	
Lys	Thr	Glu	Pro	Ser	Ser	Pro	Ser	Ser	Gly	Ile	Asp	Ala	Leu	Ser	His
			20				25						30		
His	Ser	Pro	Ser	Gly	Ser	Ser	Asp	Ala	Ser	Gly	Gly	Phe	Gly	Leu	Ala
			35				40					45			
Leu	Gly	Thr	His	Ala	Asn	Gly	Leu	Asp	Ser	Pro	Pro	Met	Phe	Ala	Gly
			50			55					60				
Ala	Gly	Leu	Gly	Gly	Thr	Pro	Cys	Arg	Lys	Ser	Tyr	Glu	Asp	Cys	Ala
65					70					75				80	
Ser	Gly	Ile	Met	Glu	Asp	Ser	Ala	Ile	Lys	Cys	Glu	Tyr	Met	Leu	Asn
			85					90						95	
Ala	Ile	Pro	Lys	Arg	Leu	Cys	Leu	Val	Cys	Gly	Asp	Ile	Ala	Ser	Gly
			100				105						110		
Tyr	His	Tyr	Gly	Val	Ala	Ser	Cys	Glu	Ala	Cys	Lys	Ala	Phe	Phe	Lys
			115				120					125			
Arg	Thr	Ile	Gln	Gly	Asn	Ile	Glu	Tyr	Ser	Cys	Pro	Ala	Thr	Asn	Glu
			130			135						140			
Cys	Glu	Ile	Thr	Lys	Arg	Arg	Arg	Lys	Ser	Cys	Gln	Ala	Cys	Arg	Phe
145					150					155				160	
Met	Lys	Cys	Leu	Lys	Val	Gly	Met	Leu	Lys	Glu	Gly	Val	Arg	Leu	Asp
			165					170						175	
Arg	Val	Arg	Gly	Gly	Arg	Gln	Lys	Tyr	Lys	Arg	Arg	Leu	Asp	Ser	Glu
			180				185						190		
Ser	Ser	Pro	Tyr	Leu	Ser	Leu	Gln	Ile	Ser	Pro	Pro	Ala	Lys	Lys	Pro
			195				200					205			
Leu	Thr	Lys	Ile	Val	Ser	Tyr	Leu	Leu	Val	Ala	Glu	Pro	Asp	Lys	Leu
			210			215					220				
Tyr	Ala	Met	Pro	Pro	Pro	Gly	Met	Pro	Glu	Gly	Asp	Ile	Lys	Ala	Leu
225					230					235				240	
Thr	Thr	Leu	Cys	Asp	Leu	Ala	Asp	Arg	Glu	Leu	Val	Val	Ile	Ile	Gly
			245						250					255	

Trp Ala Lys His Ile Pro Gly Phe Ser Ser Leu Ser Leu Gly Asp Gln
 260 265 270
 Met Ser Leu Leu Gln Ser Ala Trp Met Glu Ile Leu Ile Leu Gly Ile
 275 280 285
 Val Tyr Arg Ser Leu Pro Tyr Asp Asp Lys Leu Val Tyr Ala Glu Asp
 290 295 300
 Tyr Ile Met Asp Glu Glu His Ser Arg Leu Ala Gly Leu Leu Glu Leu
 305 310 315 320
 Tyr Arg Ala Ile Leu Gln Leu Val Arg Arg Tyr Lys Lys Leu Lys Val
 325 330 335
 Glu Lys Glu Glu Phe Val Thr Leu Lys Ala Leu Ala Leu Ala Asn Ser
 340 345 350
 Asp Ser Met Tyr Ile Glu Asp Leu Glu Ala Val Gln Lys Leu Gln Asp
 355 360 365
 Leu Leu His Glu Ala Leu Gln Asp Tyr Glu Leu Ser Gln Arg His Glu
 370 375 380
 Glu Pro Trp Arg Thr Gly Lys Leu Leu Leu Thr Leu Pro Leu Leu Arg
 385 390 395 400
 Gln Thr Ala Ala Lys Ala Val Gln His Phe Tyr Ser Val Lys Leu Gln
 405 410 415
 Gly Lys Val Pro Met His Lys Leu Phe Leu Glu Met Leu Glu Ala Lys
 420 425 430
 Ala Trp Ala Arg Ala Asp Ser Leu Gln Glu Trp Arg Pro Leu Glu Gln
 435 440 445
 Val Pro Ser Pro Leu His Arg Ala Thr Lys Arg Gln His Val His Phe
 450 455 460
 Leu Thr Pro Leu Pro Pro Pro Ser Val Ala Trp Val Gly Thr Ala
 465 470 475 480
 Gln Ala Gly Tyr His Leu Glu Val Phe Leu Pro Gln Arg Ala Gly Trp
 485 490 495
 Pro Arg Ala Ala
 500

<210> 3
 <211> 2985
 <212> DNA
 <213> Human

<400> 3
 gcggggccgcc agtgtggtgg aattcggcctt gtcactagga gaacatttgt gttaattgca 60
 ctgtgctctg tcaaggaaac tttgatttat agctgggggtg cacaaataat ggttgccggt 120
 cgcacatgga ttccggtagaa ctttgccttc ctgaatcttt ttccctgcac tacgaggaag 180
 agcttctctg cagaatgtca aacaaagatc gacacattga ttccagctgt tcgtccttca 240
 tcaagacgga accttccagc ccagcctccc tgacggacag cgtcaaccac cacagccctg 300
 gtggctcttc agacgccagt gggagctaca gttcaaccat gaatggccat cagaacggac 360
 ttgactcgcc acctctctac ccttctgctc ctatcctggg aggtagtggg cctgtcagga 420
 aactgtatga tgactgctcc agcaccattg ttgaagatcc ccagaccaag tgtgaataca 480
 tgctcaactc gatgcccaag agactgtggt tagtgtgtgg tgacatcgct tctgggtacc 540
 actatgggggt agcatcatgt gaagcctgca aggcattctt caagaggaca attcaaggca 600
 atatagaata cagctgccct gccacgaatg aatgtgaaat cacaaagcgc agacgtaaat 660
 cctgccaggc ttgccgcttc atgaagtgtt taaaagtggg catgctgaaa gaaggggtgc 720
 gtcttgacag agtacgtgga ggtcggcaga agtacaagcg caggatagat gcggagaaca 780
 gcccatacct gaaccctcag ctggttcagc cagccaaaaa gccatataac aagattgtct 840
 cacatttggt ggtggctgaa ccggagaaga tctatgccat gcctgaccct actgtccccg 900
 acagtgcacat caaagccctc actacactgt gtgacttggc cgaccgagag ttggtgggta 960
 tcattggatg ggcgaagcat attccaggc tctccacgct gtccctggcg gaccagatga 1020
 gccttctgca gagtgccttg atggaaattt tgatccttgg tgtcgtatac cggctctctt 1080
 catttgagga tgaacttgct tatgcagacg attatataat ggacgaagac cagtccaaat 1140
 tagcaggcct tcttgatcta aataatgcta tcctgcagct ggtaaagaaa tacaagagca 1200
 tgaagctgga aaaagaagaa tttgtcacc ctaaacgtat agctcttgct aattcagact 1260
 ccattgcacat agaagatggt gaagccgttc agaagcttca ggatgtctta catgaagcgc 1320
 tgcaggatta tgaagctggc cagcacatgg aagaccctcg tcgagctggc aagatgctga 1380

tgacactgcc	actcctgagg	cagacctcta	ccaaggccgt	gcagcatttc	tacaacatca	1440
aactagaagg	caaagtccca	atgcacaaac	tttttttggg	aatgttggag	gccaaagtct	1500
gactaaaagc	tccctggggc	ttcccatcct	tcatgttgaa	aaagggaaaa	taaaccceaag	1560
agtgatgtcg	aagaaactta	gagtttagtt	aacaacatca	aaaatcaaca	gactgcactg	1620
ataatttagc	agcaagacta	tgaagcagct	ttcagattcc	tccataggtt	cctgatgagt	1680
tctttctact	ttctccatca	tcttttttcc	tctttcttcc	cacatttctc	tttctcttta	1740
ttttttctcc	ttttcttctt	tcacctccct	tattttcttg	cttctttcat	tcctagtctc	1800
cattctcctt	tattttcttc	cctgtctgct	gccttctttc	ttttctttac	ctactctcat	1860
tctctctctt	tctcatcctt	cccctttttt	ctaaatttga	aatagcttta	gtttaaaaaa	1920
aaaaatcctc	ccttccccct	ttcctttccc	tttctttcct	ttttcccttt	ccttttccct	1980
ttcctttcct	ttcctcttga	ccttctttcc	atctttcttt	ttcttctctc	tgctgctgaa	2040
cttttaaaag	aggtctctaa	ctgaagagag	atggaagcca	gccctgccaa	aggatggaga	2100
tccataatat	ggatgccagt	gaacttattg	tgaaccatac	cgtccccaat	gactaaggaa	2160
tcaaagagag	agaaccaacg	ttcctaaaag	tacagtgcac	catatacaaa	ttgactgagt	2220
gcagtattag	atttcatggg	agcagcctct	aattagacaa	cttaagcaac	gttgcatcgg	2280
ctgcttctta	tcattgcttt	tccatctaga	tcagttacag	ccatttgatt	ccttaattgt	2340
tttttcaagt	cttccaggta	tttggttagt	tagctactat	gtaacttttt	cagggaatag	2400
tttaagcttt	attcattcat	gcaatactaa	agagaaaata	gaatactgca	attttgtgct	2460
ggctttgaac	aattacgaac	aataatgaag	gacaaatgaa	tcctgaagga	agatttttta	2520
aaatgttttg	tttcttctta	caaattggaga	tttttttgta	ccagctttac	cacttttcag	2580
ccattttatta	atatgggaat	ttaacttact	caagcaatag	ttgaaggga	ggtgcatatt	2640
atcaccgatg	caatttatgt	tgtgtgccag	tctggtccca	aacatcaatt	tcttaacatg	2700
agctccagtt	tacctaaatg	ttcactgaca	caaaggatga	gattacacct	acagtgactc	2760
tgagtagtca	catatataag	cactgcacat	gagatataga	tccgtagaat	tgtaggaggt	2820
gcacctctct	acttggggagg	tacaattgcc	atatgatttc	tagctgccat	ggtgggttagg	2880
aatgtgatac	tgcttgtttg	caaagtcaca	gaccttgctt	cagaaggagc	tgtgagccag	2940
tattcattta	agagaattcc	accacactgg	cggcccgcg	ttgat		2985

<210> 4
 <211> 458
 <212> PRT
 <213> Human

<400> 4

Met	Asp	Ser	Val	Glu	Leu	Cys	Leu	Pro	Glu	Ser	Phe	Ser	Leu	His	Tyr
1				5					10					15	
Glu	Glu	Glu	Leu	Leu	Cys	Arg	Met	Ser	Asn	Lys	Asp	Arg	His	Ile	Asp
			20					25					30		
Ser	Ser	Cys	Ser	Ser	Phe	Ile	Lys	Thr	Glu	Pro	Ser	Ser	Pro	Ala	Ser
		35					40					45			
Leu	Thr	Asp	Ser	Val	Asn	His	His	Ser	Pro	Gly	Gly	Ser	Ser	Asp	Ala
	50					55					60				
Ser	Gly	Ser	Tyr	Ser	Ser	Thr	Met	Asn	Gly	His	Gln	Asn	Gly	Leu	Asp
65					70					75				80	
Ser	Pro	Pro	Leu	Tyr	Pro	Ser	Ala	Pro	Ile	Leu	Gly	Gly	Ser	Gly	Pro
			85					90						95	
Val	Arg	Lys	Leu	Tyr	Asp	Asp	Cys	Ser	Ser	Thr	Ile	Val	Glu	Asp	Pro
			100					105					110		
Gln	Thr	Lys	Cys	Glu	Tyr	Met	Leu	Asn	Ser	Met	Pro	Lys	Arg	Leu	Cys
		115					120					125			
Leu	Val	Cys	Gly	Asp	Ile	Ala	Ser	Gly	Tyr	His	Tyr	Gly	Val	Ala	Ser
		130				135					140				
Cys	Glu	Ala	Cys	Lys	Ala	Phe	Phe	Lys	Arg	Thr	Ile	Gln	Gly	Asn	Ile
145					150					155				160	
Glu	Tyr	Ser	Cys	Pro	Ala	Thr	Asn	Glu	Cys	Glu	Ile	Thr	Lys	Arg	Arg
			165					170						175	
Arg	Lys	Ser	Cys	Gln	Ala	Cys	Arg	Phe	Met	Lys	Cys	Leu	Lys	Val	Gly
			180					185					190		
Met	Leu	Lys	Glu	Gly	Val	Arg	Leu	Asp	Arg	Val	Arg	Gly	Gly	Arg	Gln
		195					200					205			
Lys	Tyr	Lys	Arg	Arg	Ile	Asp	Ala	Glu	Asn	Ser	Pro	Tyr	Leu	Asn	Pro
		210				215					220				

Gln Leu Val Gln Pro Ala Lys Lys Pro Tyr Asn Lys Ile Val Ser His
 225 230 235 240
 Leu Leu Val Ala Glu Pro Glu Lys Ile Tyr Ala Met Pro Asp Pro Thr
 245 250 255
 Val Pro Asp Ser Asp Ile Lys Ala Leu Thr Thr Leu Cys Asp Leu Ala
 260 265 270
 Asp Arg Glu Leu Val Val Ile Ile Gly Trp Ala Lys His Ile Pro Gly
 275 280 285
 Phe Ser Thr Leu Ser Leu Ala Asp Gln Met Ser Leu Leu Gln Ser Ala
 290 295 300
 Trp Met Glu Ile Leu Ile Leu Gly Val Val Tyr Arg Ser Leu Ser Phe
 305 310 315 320
 Glu Asp Glu Leu Val Tyr Ala Asp Asp Tyr Ile Met Asp Glu Asp Gln
 325 330 335
 Ser Lys Leu Ala Gly Leu Leu Asp Leu Asn Asn Ala Ile Leu Gln Leu
 340 345 350
 Val Lys Lys Tyr Lys Ser Met Lys Leu Glu Lys Glu Glu Phe Val Thr
 355 360 365
 Leu Lys Ala Ile Ala Leu Ala Asn Ser Asp Ser Met His Ile Glu Asp
 370 375 380
 Val Glu Ala Val Gln Lys Leu Gln Asp Val Leu His Glu Ala Leu Gln
 385 390 395 400
 Asp Tyr Glu Ala Gly Gln His Met Glu Asp Pro Arg Arg Ala Gly Lys
 405 410 415
 Met Leu Met Thr Leu Pro Leu Leu Arg Gln Thr Ser Thr Lys Ala Val
 420 425 430
 Gln His Phe Tyr Asn Ile Lys Leu Glu Gly Lys Val Pro Met His Lys
 435 440 445
 Leu Phe Leu Glu Met Leu Glu Ala Lys Val
 450 455

<210> 5
 <211> 2987
 <212> DNA
 <213> Human

<400> 5
 gcggggccc agtgtggtgg aattcggctt gtcactagga gaacatttgt gttaattgca 60
 ctgtgctctg tcaaggaaac tttgatttat agctggggtg cacaaataat ggttgccggt 120
 cgcacatgga ttccgtagaa ctttgccctc ctgaatcttt ttccctgcac tacgaggaag 180
 agcttctctg cagaatgtca aacaaagatc gacacattga ttccagctgt tctgctctca 240
 tcaagacgga accttccagc ccagcctccc tgacggacag cgtaaccac cacagccctg 300
 gtggctcttc agacgccagt gggagctaca gttcaaccat gaatggccat cagaacggac 360
 ttgactcgcc acctctctac ccttctgctc ctatcctggg aggtagtggg cctgtcagga 420
 aactgtatga tgactgctcc agcaccattg ttgaagatcc ccagaccaag tgtgaatata 480
 tgctcaactc gatgcccaag agactgtgtt tagtgtgtgg tgacatcgct tctgggtacc 540
 actatggggg agcatcatgt gaagcctgca aggcattctt caagaggaca attcaaggca 600
 atatagaata cagctgccct gccacgaatg aatgtgaaat cacaaagcgc agacgtaaat 660
 cctgccaggc ttgccgcttc atgaagtgtt taaaagtggg catgctgaaa gaaggggtgc 720
 gtcttgacag agtacgtgga ggtcggcaga agtacaagcg caggatagat gcggagaaca 780
 gccatacct gaaccctcag ctggttcagc cagccaaaaa gccatataac aagattgtct 840
 cacatttggt ggtggctgaa ccggagaaga tctatgccat gcctgaccct actgtccccg 900
 acagtacat caaagccctc actacactgt gtgacttggc cgaccgagag ttggtggtta 960
 tcattggatg ggccaagcat attccaggct tctccacgct gtccctggcg gaccagatga 1020
 gccttctgca gagtcttgg atggaaattt tgatccttgg tgtcgtatac cggctctctt 1080
 catttgagga tgaactgttc tatgcagacg attatataat ggacgaagac cagtccaaat 1140
 tagcaggcct tcttgatcta aataatgcta tcttcagct ggtaaagaaa tacaagagca 1200
 tgaagctgga aaaagaagaa tttgtcacc ccaaagctat agctcttgct aattcagact 1260
 ccatacacat agaagatgtt gaagccgttc agaagcttca ggatgtctta catgaagcgc 1320
 tgcaggatta tgaagctggc cagcacatgg agaagaccct cgtcgaagct gcaagatgct 1380
 gatgacactg ccactcctga ggcagacctc taccaggcc gtgcagcatt tctacaacat 1440
 caaactagaa ggcaaagtcc caatgcacaa actttttttg gaaatgttgg aggccaaggt 1500

```

ctgactaaaa gctccctggg ccttcccatc cttcatgttg aaaaagggaa aataaaccca 1560
agagtgtatgt cgaagaaact tagagttag ttaacaacat caaaaatcaa cagactgcac 1620
tgataattta gcagcaagac tatgaagcag ctttcagatt cctccatagg ttccctgatga 1680
gttctttcta ctttctccat catcttcttt cctctttctt cccacatttc tctttctctt 1740
tattttttct ctttttcttc tttcacctcc cttatttctt tgcttctttc attcctagtt 1800
cccattctcc tttattttct tcccgtctgc ctgcttctt tcttttcttt acctactctc 1860
attcctctct tttctcatcc ttcccctttt ttctaaatgt gaaatagctt tagtttaaaa 1920
aaaaaaatcc tcccttcccc ctttcccttt ccttttcttt ctttttccct ttcccttttc 1980
ctttcctttc ctttcccttt gaccttcttt ccatctttct ttttcttctt tctgtgtgtg 2040
aacttttaaa agaggtctct aactgaagag agatggaagc cagccctgcc aaaggatgga 2100
gatccataat atggatgcca gtgaacttat tgtgaacct accgtcccca atgactaagg 2160
aatcaaagag agagaaccaa cgttcctaaa agtacagtgc aacatataca aattgactga 2220
gtgcagtatt agatttcatt ggagcagcct ctaattagac aacttaagca acgttgcac 2280
ggctgtctct tatcattgct tttccatcta gatcagttac agccatttga ttccttaatt 2340
gttttttcaa gtcttccagg tatttgtag tttagctact atgtaacttt ttcagggaat 2400
agtttaagct ttattcattc atgcaatact aaagagaaat aagaatactg caattttgtg 2460
ctggctttga acaattacga acaataatga aggacaaatg aatcctgaag gaagattttt 2520
aaaaatgttt tgtttcttct tacaaatgga gatttttttg taccagcttt accacttttc 2580
agccatttat taatatggga atttaactta ctcaagcaat agttgaaggg aaggtgcata 2640
ttatcacgga tgcaatttat gttgtgtgcc agtctgtgcc caaacatcaa tttcttaaca 2700
tgagctccag ttacctaata tgttcactga cacaaaggat gagattacac ctacagtgcac 2760
tctgagtagt cacatatata agcactgcac atgagatata gatccgtaga attgtcagga 2820
gtgcacctct ctacttggga ggtacaattg ccatatgatt tctagctgcc atggtgtgta 2880
ggaatgtgat actgcctgtt tgcaaagtca cagaccttgc ctgagaagga gctgtgagcc 2940
agtattcatt taagagaatt ccaccacact ggcgcccgcc gcttgat 2987

```

<210> 6

<211> 418

<212> PRT

<213> Human

<400> 6

```

Met Asp Ser Val Glu Leu Cys Leu Pro Glu Ser Phe Ser Leu His Tyr
1      5      10      15
Glu Glu Glu Leu Leu Cys Arg Met Ser Asn Lys Asp Arg His Ile Asp
20      25      30
Ser Ser Cys Ser Ser Phe Ile Lys Thr Glu Pro Ser Ser Pro Ala Ser
35      40      45
Leu Thr Asp Ser Val Asn His His Ser Pro Gly Gly Ser Ser Asp Ala
50      55      60
Ser Gly Ser Tyr Ser Ser Thr Met Asn Gly His Gln Asn Gly Leu Asp
65      70      75      80
Ser Pro Pro Leu Tyr Pro Ser Ala Pro Ile Leu Gly Gly Ser Gly Pro
85      90      95
Val Arg Lys Leu Tyr Asp Asp Cys Ser Ser Thr Ile Val Glu Asp Pro
100     105     110
Gln Thr Lys Cys Glu Tyr Met Leu Asn Ser Met Pro Lys Arg Leu Cys
115     120     125
Leu Val Cys Gly Asp Ile Ala Ser Gly Tyr His Tyr Gly Val Ala Ser
130     135     140
Cys Glu Ala Cys Lys Ala Phe Phe Lys Arg Thr Ile Gln Gly Asn Ile
145     150     155     160
Glu Tyr Ser Cys Pro Ala Thr Asn Glu Cys Glu Ile Thr Lys Arg Arg
165     170     175
Arg Lys Ser Cys Gln Ala Cys Arg Phe Met Lys Cys Leu Lys Val Gly
180     185     190
Met Leu Lys Glu Gly Val Arg Leu Asp Arg Val Arg Gly Gly Arg Gln
195     200     205
Lys Tyr Lys Arg Arg Ile Asp Ala Glu Asn Ser Pro Tyr Leu Asn Pro
210     215     220
Gln Leu Val Gln Pro Ala Lys Lys Pro Tyr Asn Lys Ile Val Ser His
225     230     235     240

```

Leu Leu Val Ala Glu Pro Glu Lys Ile Tyr Ala Met Pro Asp Pro Thr
 245 250 255
 Val Pro Asp Ser Asp Ile Lys Ala Leu Thr Thr Leu Cys Asp Leu Ala
 260 265 270
 Asp Arg Glu Leu Val Val Ile Ile Gly Trp Ala Lys His Ile Pro Gly
 275 280 285
 Phe Ser Thr Leu Ser Leu Ala Asp Gln Met Ser Leu Leu Gln Ser Ala
 290 295 300
 Trp Met Glu Ile Leu Ile Leu Gly Val Val Tyr Arg Ser Leu Ser Phe
 305 310 315 320
 Glu Asp Glu Leu Val Tyr Ala Asp Asp Tyr Ile Met Asp Glu Asp Gln
 325 330 335
 Ser Lys Leu Ala Gly Leu Leu Asp Leu Asn Asn Ala Ile Leu Gln Leu
 340 345 350
 Val Lys Lys Tyr Lys Ser Met Lys Leu Glu Lys Glu Glu Phe Val Thr
 355 360 365
 Leu Lys Ala Ile Ala Leu Ala Asn Ser Asp Ser Met His Ile Glu Asp
 370 375 380
 Val Glu Ala Val Gln Lys Leu Gln Asp Val Leu His Glu Ala Leu Gln
 385 390 395 400
 Asp Tyr Glu Ala Gly Gln His Met Glu Lys Thr Leu Val Glu Leu Ala
 405 410 415
 Arg Cys

<210> 7
 <211> 403
 <212> DNA
 <213> Human

<220>
 <221> misc_feature
 <222> (1)...(403)
 <223> n = A,T,C or G

<400> 7
 ctttttagga ggtggagaaa tttgtaagct caggtatggg ctgctctctg agtccagccg 60
 tcgcttgat ttctgacggc ctccacgcac tcgatcaagg cgcacacctt ccttcagcat 120
 cccactttg aggcatttca tgaagcggca ggcctggcag gacttgccg tccgtttggt 180
 gatctcgac tcgttggtgg cggggcagct gtactcaatg ttcccttggga tagtctctt 240
 gaagaaggcc ttgcaagcct cgcaggaggc ccacgcgtna gtggtagcca gagnaagt 300
 ccccgcacac gaggcacagg cgcttgggga tggcggttag catgttactt cgcacttgga 360
 tgggccgagt cctccatgga tggccgctgg caacagttcc tcg 403

<210> 8
 <211> 622
 <212> DNA
 <213> Human

<220>
 <221> misc_feature
 <222> (1)...(622)
 <223> n = A,T,C or G

<400> 8
 cnnnnnnnnn nnnntttntt gcctaaagtg gtaccngaa gngatgtcac cacacactaa 60
 acacagtctc ttgggcatcg agttgagcat gtattcacac ttgggtctggg gatcttcaac 120
 aatggtgctg gagcagtcac catacagttt cctgacaggc ccactacctc ccaggatagg 180
 agcagaaggg tagagagggt gcgagtcaag tccgttctga tggccattca tggttgaact 240
 gtagctccca ctggcgtctg aagagccacc agggctgtgg tggttgacgc tgtccgtcag 300
 ggaggctggg ctggaagggt ccgtcttgat gaaggacgaa cagctggaat caatgtgtcg 360
 atctttgttt ggacattctg cagagaagct cttcctccgt ngtgcaggga aaaagattca 420

ggaaggcaaa gttcttcccg aatccatgtg cgaccggaaa ccattatttg ngcaccccag	480
ctattaatca aagttccttg acagagacag ggcaattaca naatgtctcc tntnggggat	540
caactgttcn gtattnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn	600
nnnnnnnnnn nnnnnnnnnn tt	622

<210> 9
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide

<400> 9	
tgagtccagc cgtcgcttgt at	22

<210> 10
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide

<400> 10	
tgcaagcctc gcaggaggcc	20

<210> 11
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide

<400> 11	
ggccttcttc aagaggacta tc	22

<210> 12
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide

<400> 12	
aaagatcgac acattgattc c	21

<210> 13
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide

<400> 13	
gacttgactc gccacctctc	20

<210> 14
 <211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 14
gttctgatgg ccattcatgg t 21

<210> 15
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 15
gaatatgatg accctaagtc a 21

<210> 16
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 16
cttccacctc atggacacca a 21

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 17
gttaattgca ctgtgctctg 20

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 18
agtgtggtgg aattctctta 20

<210> 19
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<400> 19

tctagtgttg ctgcgagtga c	21
<210> 20	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> oligonucleotide	
<400> 20	
cttcacctc atggacacca a	21
<210> 21	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> oligonucleotide	
<400> 21	
gtctgactaa aagctccctg	20
<210> 22	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> oligonucleotide	
<400> 22	
gaagatgatg gagaaagtag a	21
<210> 23	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> oligonucleotide	
<400> 23	
cattccacgg aggcacctc	20
<210> 24	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> oligonucleotide	
<400> 24	
ccaaggccgt gcagcacttc	20
<210> 25	
<211> 21	
<212> DNA	
<213> Artificial Sequence	

<220>

<223> oligonucleotide

<400> 25

gacagcctct agatcctcga t

21

<210> 26

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<400> 26

atcatggcctt gacattcttt c

21

<210> 27

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<400> 27

agctcttgct aattcagac

19

<210> 28

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<400> 28

tcaacatgaa ggatgggaag g

21

<210> 29

<211> 2807

<212> DNA

<213> Human

<400> 29

cttatactac	tgggattacg	ttgttataga	ttgtatgata	ggctcgaagc	cagtaaacct	60
tcttgacgtc	taaaaggagg	aagttttaat	ttcagtgcaa	tacctcttgt	acatacgata	120
caagaactaa	cgaagcgact	tcttcgtaac	tttatataac	caaagtggac	cttttccggg	180
tatatgggtc	atctttctaa	tcttcttctt	tcgcaacgtc	ttctactacg	tcttaattgt	240
aatttatttc	acctacttct	taaacacctt	cttctctgtc	tattacttct	tttgaaataa	300
ctagagttgc	aaaatttccg	ggtctgtata	gtgaacctat	acttgctctg	acggtttggt	360
cttctataaa	accttaggtg	ttgtctacga	cgtcttacct	cggatcttca	ccttgacacat	420
gatggcggtg	actttcagtg	ctaatacctga	ctgttattcc	taacctctta	ggtacaactg	480
gtttacgtgg	tcgtgtcttc	accttaactt	agacgagatt	tctctgggtt	ccctaaaaac	540
ctgtttgagg	tattacttta	atgatacctga	aaccttttct	agtcgtcggc	tcttttcatg	600
tagttgttag	tcggccctcg	ggtacctcgt	gacaggagtc	tctacgcgtc	caatccgagt	660
gacagatccg	gtccgggtgg	aatcagtgac	acctgaccgt	taccttcgag	aaggacctgt	720
gtggacggga	tcgggagtg	gacccacctt	tctctttact	cgaaccgaac	ggtgagtcgt	780
gtaaggtgcc	tccgtaggag	gggaaggagc	ccgaccactt	atthttcaaag	gactccagtt	840
cctgaaggaa	aaggacggt	tttaccacag	gtcttgaaac	tccggtctcc	actaggtcac	900
taaacctctg	acgtccagtg	tgtccgacga	gtctcccgac	gacttgctct	acaggagcct	960
gctgtccgtg	gacccgaggt	cgacgccgag	gaagtagttc	tgactcggca	ggtcgggcag	1020

gagcccgtat	ctacgggagt	cggtgggtgtc	ggggtcaccg	agcaggctgc	ggtcgccgcc	1080
gaaaccggac	cgggaccggt	gggtgcggtt	gccagacctg	agcgggtgggt	acaaacgtcc	1140
gcggccccgac	cctccgtggg	gtacggcggt	ctcgatgctc	ctgacacggg	cgccgtagta	1200
cctcctgagc	cggtagttca	cgctcatgta	cgagttgcgg	taggggttcg	cgacacgga	1260
gcacacgccc	ctgtaacgga	gaccgatggt	gatgccgcac	cgaggagacg	tccgaacggt	1320
ccggaagaag	ttctcctgat	aggttccctt	gtaactcatg	tcgacggggc	gggtggttgc	1380
cacgctctag	tggtttgcct	ccgcgttcag	gacgggtccg	acggcggaag	actttacgga	1440
gtttcacccc	tacgacttcc	ttccacacgc	ggaactagct	cacgcacctc	cggcagtctt	1500
tatgttcgct	gccgacctga	gtctctcgtc	gggtatggac	tcgaatgttt	aaagagggtg	1560
acgatttttc	ggtaactggg	tctaacagag	tatggatgac	caccgactcg	gcctgttcga	1620
gatacgggtac	ggagggggac	catacggact	ccccctgtag	ttccgggact	ggtagagagac	1680
actggaccgt	ctggctctcg	aacaccagta	gtaaccgacc	cggttcgtgt	aggggtccgaa	1740
gagttcggag	agggaccccc	tgggtctact	ggacgacgtc	tcacggacct	accttttagga	1800
gtaggacccg	tagcacatgg	cgagcgacgg	gatgctgctg	ttcgaccaca	tgcgactcct	1860
gatgtagtac	ctactcctcg	tgagggcgga	gcgccccgac	gacctcgaga	tggtccggta	1920
ggacgtcgac	catgcgtcca	gttcttccga	gttccacctc	ttcctcctca	aacactgcga	1980
gttccgggac	cgggagcggt	tgaggctaag	gtacatgtag	ctcctagatc	tccgacaggt	2040
cttcgacgtc	ctggacgacg	tgctccgtga	cgctctgatg	ctcgactcgg	tcgctgact	2100
cctcgggacc	tcctgcccgt	tcgacgacga	ctgtgacggc	gacgacgccg	tctgcccggc	2160
gttccggcac	gtcgtgaaga	tatcgcagtt	tgacgtcccc	tttcacgggt	acgtgtttga	2220
gaaggacctc	tacgacctcc	ggttccggac	ccgggtccga	ctgaggggaag	tcctcacctc	2280
cggtgacctc	gttcacggga	gagggggagg	ggctcggtgg	ttctccgtcg	tacacgtaaa	2340
ggattgaggg	aacgggggag	ggggtagaca	ccggacccac	ccgtgacgag	tccgacctat	2400
gggtgacctc	caaaagggaag	gcgtctcccc	tccaaccggg	tctcgtcgaa	tctcctagag	2460
ggttccctac	ttcttacagt	tcggtactac	cttttaccgg	gaagggttag	cgacgggaag	2520
gttcgtccct	agtctcgttg	aggggcccc	aggggttagg	tgcggaaga	tcaggttggg	2580
gggagttact	ctctccgtcc	gtctagagtg	ggctgtgac	ctgtggtcct	ccggtcctct	2640
tcgtagagac	cgagtgttac	attgtagacc	gaacctcggt	caccacaag	acgtgtgggt	2700
cgtcgacgtg	gagtgacctc	gatcacaacg	acgctcactg	gagtggaag	tcggggagat	2760
cgtctcacc	cgccttcagg	actaccaacc	acaggtactc	caccttc		2807

<210> 30

<211> 2985

<212> DNA

<213> Human

<400> 30

cgcccgccgg	tcacaccacc	ttaagccgaa	cagtgatcct	cttgtaaaca	caattaacgt	60
gacacgagac	agttcccttg	aaactaaata	tcgacccac	gtgtttatta	ccaacggcca	120
gcgtgtacct	aagccatctt	gaaacggaag	gacttagaaa	aagggacgtg	atgctccttc	180
tcgaagagac	gtcttacagt	ttgtttctag	ctgtgtaact	aaggtcgaca	agcaggaagt	240
agttctgcct	tgggaagtcg	ggtcggagg	actgcctgtc	gcagttgggtg	gtgtcgggac	300
caccgagaag	tctgcccgtc	ccctcgatgt	caagttggta	cttaccggta	gtcttgctcg	360
aactgagcgg	tggagagatg	ggaagacgag	gataggaccc	tccatcaccc	ggacagtcct	420
ttgacatact	actgacgagg	tcgtggtaac	aacttctagg	ggtctggttc	acacttatgt	480
acgagttgag	ctacgggttc	tctgacacaa	atcacacacc	actgtagcga	agacccatgg	540
tgatacccca	tcgtagtaca	cttcggacgt	tccgtaagaa	gttctcctgt	taagttccgt	600
tatatcttat	gtcgacggga	cggtgcttac	ttacacttta	gtgtttcgcg	tctgcattta	660
ggacgggtccg	aacggcgaa	tacttcacaa	atcttcaccc	gtacgacttt	cttccccacg	720
cagaactgtc	tcatgcacct	ccagccgtct	tcagtgttcg	gtcctatcta	cgccctctgt	780
cggttatgga	cttgggagtc	gaccaagtcg	gtcgtttttt	cggtatattg	ttctaacaga	840
gtgtaaaaca	ccaccgactt	ggcctcttct	agatacggta	cggactggga	tgacaggggc	900
tgtaactgta	gtttcgggag	tgatgtgaca	cactgaaccg	gctggctctc	aaccaccaat	960
agtaacctac	ccgcttcgta	taaggtccga	agaggtgcga	cagggaccgc	ctggtctact	1020
cggaagacgt	ctcacgaacc	tacctttaaa	actaggaacc	acagcatatg	gccagagaaa	1080
gtaaactcct	acttgaacag	atacgtctgc	taatatatta	cctgcttctg	gtcagggtta	1140
atcgctccgga	agaactagat	ttattacgat	aggacgtcga	ccatttcttt	atgttctcgt	1200
acttcgacct	ttttcttctt	aaacagtggg	agtttccgata	tcgagaacga	tttaagtctga	1260
ggtagctgta	cttctacaaa	cttcggcaag	tcttcgaagt	cctacagaat	gtacttcgcg	1320
acgtcctaata	acttcgaccg	gtcgtgtacc	ttctggagac	agctcgaccg	ttctacgact	1380
actgtgacgg	tgaggactcc	gtctggagat	ggttccggca	cgctcgtaaag	atgtttagat	1440
ttgatcttcc	gtttcagggt	tacgtgtttg	aaaaaacct	ttacaacctc	cggttccaga	1500

ctgatttttcg	aggggacccgg	aagggttagga	agtacaactt	tttccctttt	atttggggttc	1560
tcactacagc	ttcttttgaat	ctcaaatcaa	ttgttgtagt	ttttagttgt	ctgacgtgac	1620
tattaaatcg	tcgttctgat	acttcgtcga	aagtctaagg	aggtatccaa	ggactactca	1680
agaaagatga	aagaggtagt	agaagaaagg	agaaagaagg	gtgtaaagag	aaagagaaat	1740
aaaaaaagagg	aaaagaagaa	agtggaggga	ataaagaaac	gaagaaagta	aggatcaagg	1800
gtaagaggaa	ataaaagaag	ggcagacgga	cggaagaaag	aaaagaaatg	gatgagagta	1860
aggagagaaa	agagtaggaa	ggggaaaaaa	gatttaaact	ttatcgaaat	caaatttttt	1920
tttttaggag	ggaaggggga	aaggaaaggg	aaagaaagga	aaaagggaaa	ggaaaaggga	1980
aaggaaagga	aaggagaact	ggaagaaagg	tagaaagaaa	aagaagggaag	acgacgactt	2040
gaaaattttc	tccagagatt	gacttctctc	taccttcggt	cgggacgggt	tcctacctct	2100
aggatttata	cctacggtca	cttgaataac	acttggtatg	gcaggggtta	ctgattccct	2160
agtttctctc	tcttggttgc	aaggattttc	atgtcacggt	gtatatgttt	aactgactca	2220
cgtcataatc	taaagtaccc	tcgtcggaga	ttaatctggt	gaattcgttg	caacgtagcc	2280
gacgaagaat	agtaacgaaa	aggtagatct	agtcaatgtc	ggtaaactaa	ggaattaaca	2340
aaaaagttca	gaagggccat	aaacaatcaa	atcgatgata	cattgaaaaa	gtcccttatc	2400
aaattcgaaa	taagtaagta	cgttatgatt	tctctttatt	cttatgacgt	taaaacacga	2460
ccgaaacttg	ttaatgcttg	ttattacttc	ctgtttactt	aggacttcct	tctaaaaaatt	2520
tttacaaaac	aaagaagaat	gtttacctct	aaaaaaacat	ggtcgaaatg	gtgaaaagtc	2580
ggtaaataat	tataccctta	aattgaatga	gttcggtatc	aacttccctt	ccacgtataa	2640
tagtgcctac	gttaaataca	acacacggtc	agaccagggg	ttgtagttaa	agaattgtac	2700
tcgagggtcaa	atggattttac	aagtgactgt	gtttcctact	ctaattgtgga	tgtcactgag	2760
actcatcagt	gtatatattc	gtgacgtgta	ctctatatct	aggcatctta	acagtcctca	2820
cgtggagaga	tgaaccctcc	atgttaacgg	tatactaaag	atcgacggta	ccaccaatcc	2880
ttacactatg	acggacaaaac	gtttcagtg	ctggaacgga	gtcttccctcg	acactcggtc	2940
ataagtaa	tctcttaagg	tggtgtgacc	gccgggcgcg	aacta		2985